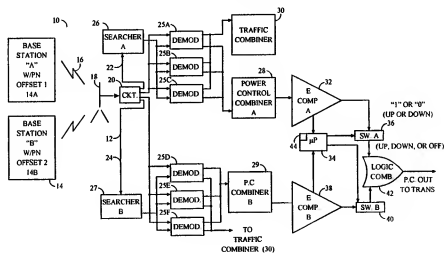




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<b>(21) International Application Number:</b> PCT/US98/17528 <b>(22) International Filing Date:</b> 24 August 1998 (24.08.98) <b>(30) Priority Data:</b> 08/919,806 29 August 1997 (29.08.97) US <b>(71) Applicant:</b> QUALCOMM INCORPORATED [US/US]; 6455 Lusk Boulevard, San Diego, CA 92121 (US). <b>(72) Inventors:</b> SAINTS, Keith, W.; Apartment 4212, 7160 Shoreline Drive, San Diego, CA 92122 (US). TIEDEMANN, Edward, G., Jr.; 4350 Bromfield Avenue, San Diego, CA 92122 (US). <b>(74) Agents:</b> MILLER, Russell, B. et al.; Qualcomm Incorporated, 6455 Lusk Boulevard, San Diego, CA 92121 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BI, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> <b>(88) Date of publication of the international search report:</b> 27 May 1999 (27.05.99)

**(54) Title:** METHOD AND APPARATUS FOR PROCESSING POWER CONTROL SIGNALS IN A MOBILE TELEPHONE SYSTEM

**(57) Abstract**

The transmitted power of a mobile telephone (12) is established by power control bits that are transmitted in a traffic channel from a base station (14A, 14B) and that are demodulated by a rake receiver (22, 24) in the telephone. The rake receiver includes a plurality of demodulators (25a to 25f) that demodulate respective fingers of the traffic channel which may be caused by multipath conditions, with the power control bits from each demodulator being combined with the power control bits of the other demodulators in the rake receiver regardless of whether the demodulators (25a to 25f) are in lock with their respective fingers. The combined power control signal from a rake receiver (22, 24) associated with a first base station (14A, 14B) is then tested against a threshold. If the combined power is at least equal to the threshold, the combined power control signal is sent to a logic combiner (42). If other base stations are communicating with the mobile telephone, the combined power control signal from each of these other base stations is also sent to the logic combiner (42). If any power control signal commands the mobile telephone to decrease its transmitted power, it does so; otherwise, it increases its transmitted power. Alternatively, the power control bits from each demodulator in a rake receiver (22, 24) can be blocked if the finger energy falls below a threshold that depends on the number of fingers from the associated base station.

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# INTERNATIONAL SEARCH REPORT

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PCT/US 98/17528

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 H04B7/005 H04B1/707

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X  A	<p>WO 95 08901 A (NOKIA TELECOMMUNICATIONS OY ;JOLMA PETRI (FI); UOLA RISTO (FI)) 30 March 1995 see abstract</p> <p>see page 1, line 5-17 see page 2, line 16 - page 3-30 see page 4, line 20 - page 5, line 16 see page 7, line 19-26 see page 8, line 27 - page 9, line 25 see figures see claims</p> <p style="text-align: center;">--- -/-</p>	<p>11</p> <p>1-10, 12-35</p>

☒ Further documents are listed in the continuation of box C.

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Int. Application No.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	<p>US 5 640 414 A (BLAKENEY II ROBERT D ET AL) 17 June 1997  see column 12, line 7-24  see column 12, line 58 - column 13, line 19  see column 13, line 58 - column 14, line 5  see column 28, line 3-17  see figures 1,2  ---</p>	1-35
A	<p>EP 0 671 819 A (ROKE MANOR RESEARCH) 13 September 1995  see abstract  see column 1, line 1-46  see column 2, line 16-47  see column 4, line 6-56  see figure 3  see claims 1,3,4,7  ---</p>	1-35
A	<p>EP 0 680 160 A (NIPPON TELEGRAPH &amp; TELEPHONE) 2 November 1995  see abstract  see column 2, line 34 - column 5, line 34  see column 8, line 28 - column 9, line 20  see claims  ---</p>	1-35
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